

Application No. 09/648,368

The following listing of claims replaces all prior versions, and listings, of claims in this application:

1. (Currently Amended) A cholesteric layered material comprising at least one three-dimensionally crosslinked, aligned cholesteric layer, wherein the crosslinked cholesteric layer(s) does (do) not exhibit any color shift which can be induced by external stimuli selected from the group consisting of changes in the temperature of the layered material, the action of diluents on the layered material, and combinations thereof.

Claim 2 (Cancelled).

3. (Currently Amended) ~~The cholesteric layered material as claimed in claim 2, which exhibits no color shift on~~ A cholesteric layered material comprising at least one three-dimensionally crosslinked, aligned cholesteric layer, wherein the crosslinked cholesteric layer(s) does (do) not exhibit any color shift which can be induced by external stimuli selected from the group consisting of

- a) a change in the temperature in the range from -30°C to 250°C;
- b) warming to temperatures in the range from 80 to 160°C with simultaneous exposure to a diluent; and/or
- c) treatment for 15 minutes at 80°C in xylene followed by drying.

4. (Currently Amended) The cholesteric layered material as claimed in claim 3, wherein the external stimuli comprises treatment in xylene, and wherein the reflection maximum of the cholesteric layer after the xylene treatment can be shifted by not more than about 10 nm into the higher or lower wavelength region.

5. (Previously Presented) The cholesteric layered material as claimed in claim 1, wherein the cholesteric layer has a mean dry layer thickness of less than about 5  $\mu\text{m}$ .

6. (Previously Presented) The cholesteric layered material as claimed in claim 1, wherein the cholesteric layer has a mean dry layer thickness of at least one pitch height.

Application No. 09/648,368

7. (Previously Presented) The cholesteric layered material as claimed in claim 1, which comprises a plurality of color shift-stable cholesteric layers of identical or different thickness and identical or different chemical composition.

8. (Currently Amended) A cholesteric pigment comprising at least one three-dimensionally crosslinked, aligned cholesteric layer having a mean particle size in the range from 5 to 50  $\mu\text{m}$  and a thickness of from 0.2 to 5  $\mu\text{m}$ , wherein the at least one crosslinked cholesteric layer(s) exhibits (~~exhibits~~) no visually evident color shift.

9. (Currently Amended) A process for the production of a cholesteric layered material as claimed in claim 1, which comprises:

a) casting and simultaneous alignment of a cholesteric coating composition comprising at least one crosslinkable substance onto a support with formation of a first cholesteric layer, where the support is essentially chemically inert to the cholesteric layer to be applied;

b) drying and crosslinking of the applied layer, where the conditions are selected in such a way that the resultant layer exhibits no visually evident color shift;

c) ~~removal of~~ removing the layered material from the support after one or more further aligned cholesteric layers have, if desired, been applied to the layer obtained in accordance with step a).

10. (Previously Presented) The process as claimed in claim 9, wherein a support is employed which does not adversely affect the alignment of the cholesteric layer cast thereon during drying and curing.

11. (Previously Presented) The process as claimed in claim 9, wherein the support has an adhesive strength of less than about 1 cN to the dried and crosslinked first cholesteric layer cast thereon.

Application No. 09/648,368

12. (Previously Presented) The process as claimed in claim 9, wherein a layered material comprising a plurality of cholesteric layers is produced, where the second layer can be removed selectively from the first layer on the support as a composite with any further layers.

13. (Previously Presented) The process as claimed in claim 9, wherein the support is selected from the group consisting of a plastic support, a metal support, a glass support, and a ceramic support.

14. (Previously Presented) The process as claimed in claim 13, wherein the plastic support comprises a release layer of crosslinked, optionally aligned, cholesteric material onto which the first cholesteric layer is cast.

15. (Previously Presented) The process as claimed in claim 14, wherein the adhesion between the plastic support and the release layer is at least about twice the adhesion between release layer and first cholesteric layer.

16. (Previously Presented) The process as claimed in claim 9, wherein the coating compositions for the cholesteric layer(s) and the release layer independently of one another have a viscosity in the range from about 1 to 50 mPas, and the coating rate is in the range from about 1 to 800 m/min.

17. (Previously Presented) The process as claimed in claim 9, wherein the crosslinking of the cholesteric layer(s) and of any cholesteric release layer present is carried out by electron beams or UV radiation with simultaneous warming of the layer 25 to be cured, where the emitter power is in the range from about 50 to 200 watts/cm.

18. (Previously Presented) The process as claimed in claim 17, wherein the layer temperature during the radiation curing is at least 60°C.

Application No. 09/648,368

19. (Previously Presented) The process as claimed in claim 9, wherein a further support film is applied to the cholesteric layer applied last, and the one or more cholesteric layer(s) is (are) removed from the support as a composite.

20. (Previously Presented) The process as claimed in claim 9, wherein one or more cholesteric layer(s) is (are) removed from the support by blasting with compressed air, a water jet, steam or with the aid of a knife coater and ground to give pigments.

21. (Previously Presented) A composition comprising at least one cholesteric pigment as claimed in claim 8 and one or more additional components.

Claims 22 and 23 (Cancelled).

24. (Previously Presented) A polarizer comprising a layered material as claimed in claim 1, which is, optionally applied to a support film.

25. (Previously Presented) A broad-band polarizer comprising a layered material as claimed in claim 1 having a number of from 3 to 20 cholesteric layers with reflection maxima matched to one another, where the polarizer has a total thickness without support film in the range from about 2 to 50  $\mu\text{m}$ .

26. (Previously Presented) The cholesteric layered material as claimed in claim 4, wherein the cholesteric layer has a mean dry layer thickness of less than about 2  $\mu\text{m}$ .

27. (Previously Presented) The cholesteric layered material as claimed in claim 4, wherein the cholesteric layer has a mean dry layer thickness of less than or equal to about 1  $\mu\text{m}$ .

28. (Previously Presented) The process as claimed in claim 18, wherein the layer temperature during radiation curing is at least 80°C.

29. (Previously Presented) The process as claimed in claim 18, wherein the layer temperature during radiation curing is at least 90°C.

Application No. 09/648,368

30. (Previously Presented) A method of making an article comprising incorporating the cholesteric layered material as claimed in claim 1 into and/or onto the article.

31. (Previously Presented) The method as claimed in claim 30, wherein the article is selected from the group consisting of a motor vehicle, a motor vehicle accessory, a computer, a leisure article, a sport article, a toy article, an optical article, a cosmetic article, a textile article, a leather article, a jewelry article, a writing article, a spectacle frame, a construction article, a print article, and a paint article.

32. (Previously Presented) The method as claimed in claim 31, wherein the article is a motor vehicle and the cholesteric layered material is painted onto the motor vehicle.

33. (Previously Presented) A method of making an article comprising incorporating the composition as claimed in claim 8 into and/or onto the article.

34. (Previously Presented) The method as claimed in claim 32, wherein the article is selected from the group consisting of a motor vehicle, a motor vehicle accessory, a computer, a leisure article, a sport article, a toy article, an optical article, a cosmetic article, a textile article, a leather article, a jewelry article, a writing article, a spectacle frame, a construction article, a print article, and a paint article.

35. (Previously Presented) The method as claimed in claim 34, wherein the article is a motor vehicle and the cholesteric layered material is painted onto the motor vehicle.